

STATE OF VERMONT
PUBLIC SERVICE BOARD

Docket No. 5491

Tariff Filing of Central Vermont)
Public Service Corporation requesting)
a 14.9% increase in rates, to take)
effect April 1, 1991)

PREFILED TESTIMONY OF EDWARD BODMER
ON BEHALF OF
VERMONT PUBLIC INTEREST RESEARCH GROUP
("VPIRG")

Mr. Bodmer recommends that Central Vermont's allowed return on common equity should be no more than 12%. Mr. Bodmer finds that the allowed return appropriate to the Company under DCF and CAPM methodologies ranges from 11.3% to 12.1%. He explains that Central Vermont faces less risk than average for electric utilities, and that the Company's quality of credit is satisfactory. The potential savings in financing costs realized by a change from a BBB+ to A- bond rating are far less than the cost to rate payers to increase the Company's allowed return to 13%.

TESTIMONY OF
EDWARD C. BODMER

1. Q. WOULD YOU PLEASE STATE YOUR NAME AND POSITION.

A. My name is Edward C. Bodmer. I am a Vice President of RCF, Incorporated, 122 South Michigan Avenue, Chicago, Illinois.

2. Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND RELEVANT PROFESSIONAL EXPERIENCE.

A. At RCF my work has primarily involved working for the City of Chicago in evaluating options related to expiration of the 42 year franchise with Commonwealth Edison Company. Before joining RCF in 1990, I was a vice president in the Electric and Gas Division of the First National Bank of Chicago where my responsibilities included managing a team of analysts dedicated to the electric and gas utility industry, maintaining financial models specifically relating to utility companies, and preparing credit analyses of utility companies. From 1979-1983 I was on the staff of the Illinois Commerce Commission in the Accounts and Finance Division. In

that position I presented expert testimony on a number of subjects including cost of capital.

I have an MBA from the University of Chicago with a specialization in Econometrics and Finance and a BS in Finance from the University of Illinois. I have attached my curriculum vita as exhibit EB-6.

3. Q. ON WHOSE BEHALF ARE YOU TESTIFYING?

A. I am testifying on behalf of the Vermont Public Interest Research Group.

4. Q. WHAT IS THE SUBJECT OF YOUR TESTIMONY?

A. My testimony addresses the level of return on equity (ROE) which is appropriate for Central Vermont Public Service (CV) and certain other financial issues relevant to return on equity which were raised by the Company's witness, Mr. Booraem.

5. Q. WHAT IS YOUR RECOMMENDATION?

A. Based on reviewing financial data pertaining to CV, I recommend a return on equity of no greater than 12%. I principally base this recommendation on the following:

- (1) Based on using the discounted cash flow model (DCF) and the capital asset pricing model (CAPM) CV's cost of equity ranges from 11.3% to 12.1%.
- (2) Using objective criteria, CV is less risky than most other utility companies. CV has a stable capacity outlook, a high proportion of residential customers, a strong capital structure and a demonstrated ability to earn its rate of return. These are some of the reasons that in terms of the most comprehensive and widely accepted measure of financial risk - beta - CV's risk is lower than the risk of most other utility companies.
- (3) Given current conditions in financial markets and the demonstrated ability of CV to earn its allowed return, the 12% ROE granted in the last rate case is sufficient to cover CV's cost of equity. The adequacy of the 12% ROE is demonstrated by the fact that CV's stock price has consistently exceeded its book value since the last rate case.

6. Q. HOW HAVE YOU ESTIMATED CV'S COST OF EQUITY?

- A. I have used two of the three methods which Mr. Booraem used to estimate cost of equity - the DCF approach and the CAPM approach. My cost of equity range differs from Mr. Booraem's estimate because: 1) I used sustainable expected growth rates in applying the discounted cash flow model; 2) I used short-term rather than long-term interest rates in computing cost of equity using the capital asset pricing model, and; 3) I used the Company specific beta in the capital asset pricing model. Based on these methods, I estimate the Company's cost of equity to be in the following ranges:

CAPM	11.5% - 12.1%
DCF	11.3% - 11.5%

7. Q. WHAT IS CV'S ESTIMATED COST OF EQUITY USING THE CAPITAL ASSET PRICING MODEL?

- A. Based on the CAPM approach, I estimate that CV's cost of equity ranges from 11.5% to 12.12%. The difference between these numbers and Mr. Booream's CAPM estimate is based on use of short term rates rather than intermediate rates to represent the returns on risk free instruments. In addition, I employ the beta of .6, which is specific to CV.

In order to show why use of short-term rates are most appropriate for use in the CAPM formula, it is necessary to review some of the finance theory which is the basis for developing the model. Derivation of the CAPM is based on demonstrating that efficient portfolios of investments are a combination of risk free securities and a weighted market basket of all securities (R_m). In developing the model the risk free security is defined as an instrument where there is no question about what the real value of the investment will be in the future. Short-term government securities are a reasonable proxy for risk free investments because there is very little risk as to what the real value of the investment will be at maturity.

Long-term or intermediate-term government securities are not good representations of risk free securities because these securities include an element of interest rate risk. In addition, although the future nominal value is known with certainty, the real value varies with the rate of inflation. In fact, it is sometimes argued that long term bonds have more risk than the common equity of utility companies because the allowed return on equity changes as the cost of equity changes. In other words, since the interest rate on long term bonds remains fixed in nominal terms while the return on equity changes with changes in the cost of equity, common equity securities represent a better hedge against cost of capital changes than long-term bonds. Because of this, the price of long-term bonds actually can vary

more than the price of equity securities with variations in the cost of capital.

As Mr. Booraem explains, the cost of equity is determined in the CAPM using the formula:

Cost of Equity =

Risk Free Rate + Beta x Market Risk Premium

My estimate of the risk free rate is based on using recent rates on 1 year treasury bills of approximately 6.3% and the average rate on 1 year treasury bills over the past year of about 6.9% (these rates are presented on exhibit EB-1). To complete the CAPM calculation I have used the beta estimate published by Value Line of .60 and I have used the market premium over short term securities of 8.7% which is published by Ibbotson and Associates. Using this data, CV's cost of equity range is from 11.52% (6.3% + .6 x 8.7%) to 12.12% (6.9% + .6 x 8.7%).

8. Q. WHY DO YOU USE THE COMPANY'S BETA INSTEAD OF THE INDUSTRY AVERAGE BETA IN COMPUTING CV'S COST OF EQUITY?

- A. Beta is defined by computing the covariance between returns of a particular security and returns on a portfolio made up of all securities in the market.

Averaging betas across companies is contrary to the basic idea of the beta statistic which is to capture the unique risk of an individual security.

Indeed, if beta's were averaged across all securities the resulting average beta would be equal to 1.0. In this extreme case of averaging betas for all securities, the CAPM would have no meaning because all companies would have the same risk profile. Similarly, averaging betas across all utility companies removes information about risk characteristics which are specific to a particular utility company.

9. Q. HOW HAVE YOU ESTIMATED CV'S COST OF EQUITY USING THE DISCOUNTED CASH FLOW MODEL?

The discounted cash flow model is based on the notion that a company's stock price can be represented as the present value of all future cash flows from dividends and capital appreciation which are expected by shareholders.

If the cash flows that are expected by shareholders are known, one can derive the implied cost of equity which is used by the market to establish the price of common stock. Stated another way, the implied cost of capital is the number which just makes the stock price equal to the present discounted value of expected cash flows.

The formula $k = D/P + g$ can be derived by assuming cash flows are received in the form of dividends in perpetuity and dividends have a constant rate of growth. In this model "k" represents the cost of equity, "D" represents expected dividends per share in the next annual period, "P" represents current stock price, and "g" represents the growth rate of dividends expected by investors.

In estimating cost of capital using the DCF formula, the growth rate expected by investors is the least straightforward item to quantify. While it is difficult to precisely estimate the growth rate expected by investors, it is important that the long-run growth rate in dividends should be achievable based on the earning power of the company.

To determine the level of dividend growth which is expected by CV's investors, I note that Value Line stated in its March review: "CV should be able to grow the common dividend over the next 3 to 5 years, but at an annual rate of only about 2.0%." Because Value Line is a widely read and consulted publication, this statement is a strong indication of investor expectations of CV's dividend growth.

The low dividend growth estimated by Value Line is confirmed by an analysis of how much CV's dividend could grow under stable rate of return conditions. The formula $\text{Dividend Growth} = (1 - \text{Payout Ratio}) \times \text{ROE}$, can be used to evaluate dividend growth if earned return is reasonably stable. Recently, CV's dividend payout ratio has ranged between 75% and 85%. Applying this formula with a 75% payout along with a 12% ROE produces a growth rate of 3%. (If this formula was used with an 85% dividend payout ratio, the resulting growth rate would be lower.) Even if a 13% earned ROE is used, the growth rate is only 3.25%.

To compute cost of equity using the DCF method, the growth rate must be added to expected next period dividend divided by current stock price. (While efficient markets theory dictates the use of the current stock price, Mr. Booraem's use of a longer period is adequate because it accounts for changes which are caused by the timing of dividend payments. I do note that using a more current price would reduce the observed dividend yield and cost of equity since CV's stock has recently traded around \$28.) Adding a 3% or a 3.25% growth rate to the dividend yield of 8.3% used by Mr. Booraem produces a range in cost of equity estimate of 11.3% to 11.55%. (Note that use of 3.25% expected growth should in no way imply endorsement of a 13.0% cost of equity. I have used the 3.25% growth rate

to be conservative. It is possible that investor expectations are that CV can attain an earned return of 13%).

10. Q. CV HAS TARGETED A DIVIDEND GROWTH RATE OF 4-5%. SHOULD THE COMPANY TARGET BE USED AS A BASIS FOR DETERMINING RETURN ON EQUITY?

A. No. The 4-5% figure is drawn from the expected rate of inflation which is not the same as the annual rate of growth expected by reasonable investors. Mr. Booraem's admission that there is a "concern regarding the safety of the dividend" shows that it is unrealistic for investors to expect a high dividend growth rate. Given CV's current payout ratio and the fact that it is earning its allowed return, large increases in dividend per share are simply not realistic unless the payout exceeds 100%. In other words, CV's earning power is not high enough to warrant a dividend growth of 4-5%.

To illustrate how dividend growth relates to the earning power of a company, consider a case where a utility company earns its cost of equity and chooses a dividend policy based on a 100% payout ratio. In this case if the company grew its dividend it would be forced to pay out more than 100% of earnings and, all else being equal, its common equity would

1 decline. This situation would obviously not be sustainable in the long run
2 because the company would gradually reduce its equity base to zero.

3
4 The stock of this hypothetical 100% payout company would be priced much
5 like a long-term bond where the high dividend yield covers expected future
6 inflation as well as the real required rate of return. Investors do not need
7 to experience dividend growth at the rate of inflation to cover the decline
8 in purchasing power implied by inflation because the stock is already priced
9 to reflect inflation in the existing dividend yield. In CV's case, the high
0 payout and high dividend yield imply that the current stock price does not
1 include expectations of significant dividend growth.

2
3 11. Q. CV'S RETURN ON EQUITY WAS SET AT 12% IN ITS LAST RATE
4 CASE. IS THERE SUFFICIENT REASON TO INCREASE THE
5 COMPANY'S ALLOWED RETURN?

6
7 A. No. 12% has been demonstrated as sufficient to cover CV's cost of equity.
8 The fact that CV's market to book ratio continued to be in excess of 1.0
9 after the last rate case is strong evidence that 12% exceeds CV's cost of
0 equity.
1

It is a basic mathematical principle that if return is equal to cost of capital, the present discounted value of cash flows will equal the book basis of the capital investment. For example, if the cost of capital is 10% and the earned return is 10%, the present discounted market value on a stream of \$10 cash flows is \$100. Similarly, if book equity for ratemaking purposes is \$100 and the earned return is equivalent to the cost of capital, market value will precisely equal book value of \$100. If returns are greater than the cost of capital, market value will exceed book value. That is the case with CV's current stock price, which suggests that the allowed return on equity has been satisfactory to investors.

12. Q. WHAT HAS HAPPENED TO THE COST OF CAPITAL SINCE CV WAS GRANTED A 12% RETURN ON EQUITY IN THE LAST RATE CASE?

A. If anything, the cost of capital has gone down since CV's last rate case. Exhibit EB-2 shows the movement of interest rates on a quarterly basis since 1970. The exhibit shows that interest rates are lower than they were in May 1990 when the last rate order was issued. This reduction in interest rates suggests that return on equity should be less than the 12% previously allowed.

13. Q. PLEASE COMMENT ON CV'S RISK PROFILE COMPARED WITH THE RISKS EXPERIENCED BY OTHER UTILITY COMPANIES.

A. By examining the beta statistic, I have concluded that CV is of relatively low risk.

Based on finance theory which has developed over the last 25 years, the kind of risk which investors require compensation for with a higher rate of return is risk which cannot be reduced through holding a diversified portfolio. It is now well accepted that measuring risk by evaluating the so called covariance between returns for an individual company and returns for all stocks correctly captures all important financial risk.

The so-called beta measure is the statistic used to quantify non-diversifiable risk and is the most comprehensive and objective measure of a company's risk profile. In exhibit EB-2 I compare CV's beta with the beta of other utility companies as measured by Value Line. The exhibit shows that only three utility companies have a lower beta than CV. The low beta measure indicates that, based on objective statistical analysis, CV's risk is below average. Therefore, an increased return on equity based on its risk is inappropriate.

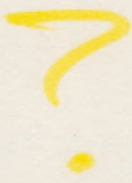
14. Q. WHAT ARE SOME OF THE REASONS CV HAS LOWER RISK THAN OTHER UTILITY COMPANIES?

A. Some factors which explain CV's relatively low risk include CV's limited expenditures on new generating plant, CV's high proportion of residential ratepayers, CV's ability to earn its allowed return and CV's strong capital structure.

CV's high proportion of residential sales are shown on exhibit EB-3. In the exhibit residential kwh sales are divided by total retail kWh sales for CV and other utility companies. The companies are ranked according to the percentage of residential sales from highest to lowest. Exhibit EB-3 shows that CV ranks 21st out of 125 companies in terms of residential sales percentage. The high percentage of residential sales reduces risk because CV's profit will vary less than the profit of other utility companies due to fluctuations in economic activity. Also, the high proportion of residential sales reduces CV's exposure to competition from non-utility providers.

An important reason for CV's low financial risk is the Company's conservative capital structure which includes a relatively low debt leverage. A basic tenet of financial theory is that increased leverage directly increases

1 financial risk. For purposes of setting rates CV has requested a capital
2 structure consisting of 46.6% common equity and 41.9% long term debt and
3 11.5% preferred equity. Exhibit EB-4, based on data compiled by
4 Regulatory Research Associates, shows that with an equity ratio of 46.6%,
5 CV ranks 15th highest out of 81 utility companies. (It should be noted that
6 off-balance sheet obligations related to purchased power contracts and other
7 items do not increase risk for CV shareholders. Since the return on equity
8 and debt service portions of the contracts are passed directly to ratepayer,
9 the contracts neither increase nor reduce risk to CV shareholders).



11 CV's demonstrated ability to earn its allowed return further explains why
12 the company has lower observed risk than the other utility companies.
13 When financial analysts evaluate the risk of utility companies, the ability to
14 earn allowed returns is an important consideration in accessing earnings
15 quality. After all, it is the earned rather than the allowed return which
16 drives the value of a company's common stock.

18 Furthermore, and contrary to Mr. Booream's testimony, I submit that
19 expenditures on demand side management (DSM) serve to reduce rather
20 than increase risk. Spending on DSM instead of generating plant minimizes
21 exposure to fuel price fluctuations and uncertain capital costs which are
22 associated with new generating units. Additionally, meeting increased

demand through DSM provides more flexibility than other resources.

15. Q. ARE THERE OTHER ISSUES WITH RESPECT TO CV'S RISK WHERE
YOU DISAGREE WITH MR. BOORAEM?

Yes. Notwithstanding the objective risk measurement using beta Mr. Booraem suggests that CV's risk is above average. He notes the bond downgrade, elimination of CV's fuel adjustment clause, high expenditures for DSM, CV's bond maturity requirements and the company's above average dividend yield. In fact, these factors do not imply that CV has above average risk. First, as evidenced by CV meeting its allowed ROE nine years out of ten, the absence of a fuel adjustment clause has not limited CV's ability to earn its allowed return. Second, CV's high dividend yield and dividend payout ratio simply reflect management's dividend policy and expectations of minimal dividend growth by financial markets. Third, CV's bond maturity requirements are within a normal range and do not necessitate large external financing. Finally, a BBB+ bond rating is a satisfactory credit rating for a utility the size of CV.

16. Q. PLEASE COMMENT ON CV'S CURRENT CREDIT QUALITY.

- A. CV's current credit quality is satisfactory and does not justify increasing the Company's allowed rate of return. CV's financial indicators meet or exceed Standard and Poors criteria for A rated companies as shown in the following table. The table was derived from Standard and Poor's credit review of electric, gas and water utilities:

	Range for Rated Co.s	Range for BBB Rated Co.s	CV 1990	CV 1989
Pretax Interest Coverage (x)	2.5-4.0	1.5-3.0	2.88	3.11
Total Debt/ Total Capital (%)	44-54	58-66	52.8	48.3
Funds Flow Interest Coverage (x)	2.75-4.25	1.5-3.0	3.12	3.01
Funds From Operations/Avg. Total Debt (%)	17-30	12-22	19.0	22.6
Net Cash Flow/	65-95	40-70	72.4	75.5

The table shows that while CV's credit quality declined in 1990, its indicators are still in the range for A rated companies. This data suggests that dramatic action to restore CV's credit quality is not required.

17. Q. DOES THE DOWNGRADING OF CV'S BONDS JUSTIFY AN INCREASE
IN CV'S RETURN ON EQUITY?

A. For a number of legal, economic and financial reasons, CV's return on equity should be set at a level equivalent to its cost of equity. If returns are set above the cost of capital in order to achieve a certain bond rating, consumers will pay rates which exceed the cost of service and investors will gain a windfall and have an incentive to overinvest.

Attempting to improve credit rating through granting high rates of return is a very expensive and uneconomic proposition from the standpoint of consumers. The savings associated with the lower interest rates are simply not worth the cost of achieving the higher bond rating through granting an inflated return on equity.

The high cost to consumers of using increases in return on equity to achieve a bond rating is illustrated by comparing the costs and benefits of raising the return on equity by 1% in order to achieve a bond rating increase:

- o Increasing the return on equity by 1% increases revenue requirements by approximately \$2.2 million based on CV's rate base of \$282 million and its proposed capital structure.
- o Recently interest costs on bonds rated BBB have exceeded costs on A rated bonds by .38% as shown on Exhibit EB-5. Note that this interest cost differential is for changes of three "notches" in the bond rating. CV's bonds were recently only downgraded by one "notch" from BBB+ to A-.
- o Mr. Booraem mentioned that \$96 million of CV's bonds will mature by the year 2000. If interest costs were increased by .38% on all of this debt, the revenue requirement savings would average only about \$180,000 annually over the period.

18. Q. PLEASE COMMENT ON MR. BOORAEMS'S RISK PREMIUM APPROACH.

A. It is difficult to fully analyze Mr. Booream's risk premium approach due to the survey oriented nature of the study upon which he based his conclusions. I do note however that the survey which Mr. Booream refers to was done a few years ago and that the risk premium estimate declined steadily from 1975 to 1985. Given changes in the tax law and changes in

the financial markets I do not believe that the approach is very useful in evaluating today's cost of capital. Furthermore, Mr. Booream's assertion that long-term bonds always carry a premium to equity costs is not necessarily true because of the fixed nature of the nominal interest payments and because of the different tax treatment on debt and equity.

In my opinion, using the CAPM is the most accurate and objective approach for determining risk premium.

19. Q. DOES THIS CONCLUDE YOUR PREFILED TESTIMONY?

A. Yes.

Yield on Short-Term Government Securities

		3 Month	6 Month	1 Year
1970	1	7.210	7.200	7.553
1970	2	6.667	6.830	7.453
1970	3	6.327	6.513	6.940
1970	4	5.350	5.507	5.647
1971	1	3.837	3.917	4.050
1971	2	4.240	4.440	4.997
1971	3	5.003	5.270	5.750
1971	4	4.230	4.407	4.730
1972	1	3.437	3.803	4.407
1972	2	3.770	4.233	4.643
1972	3	4.220	4.727	5.153
1972	4	4.863	5.173	5.437
1973	1	5.700	5.987	6.310
1973	2	6.603	6.790	7.017
1973	3	8.323	8.407	8.507
1973	4	7.500	7.613	7.413
1974	1	7.617	7.480	7.353
1974	2	8.153	8.280	8.690
1974	3	8.190	8.527	9.010
1974	4	7.360	7.457	7.673
1975	1	5.750	5.867	6.307
1975	2	5.393	5.733	6.527
1975	3	6.330	6.787	7.520
1975	4	5.627	5.967	6.680
1976	1	4.917	5.260	5.977
1976	2	5.157	5.523	6.260
1976	3	5.150	5.410	6.013
1976	4	4.673	4.817	5.227
1977	1	4.630	4.870	5.420
1977	2	4.840	5.070	5.693
1977	3	5.497	5.757	6.280
1977	4	6.110	6.413	6.960
1978	1	6.393	6.690	7.310
1978	2	6.477	6.993	7.787
1978	3	7.313	7.600	8.447
1978	4	8.570	9.050	9.817
1979	1	9.383	9.450	10.300
1979	2	9.377	9.363	9.937
1979	3	9.673	9.643	10.153
1979	4	11.643	11.773	12.270

Yield on Short-Term Government Securities

		3 Month	6 Month	1 Year
1980	1	13.353	13.243	13.933
1980	2	9.617	9.610	10.283
1980	3	9.153	9.347	10.137
1980	4	13.613	13.257	13.840
1981	1	14.390	13.647	14.120
1981	2	14.907	14.277	15.127
1981	3	15.053	15.060	16.320
1981	4	11.750	12.213	13.547
1982	1	12.613	13.070	14.333
1982	2	12.420	12.553	13.797
1982	3	9.317	10.377	11.840
1982	4	7.907	8.263	9.130
1983	1	8.107	8.177	8.860
1983	2	8.397	8.470	9.180
1983	3	9.140	9.307	10.297
1983	4	8.800	8.977	9.953
1984	1	9.170	9.283	10.177
1984	2	9.797	10.220	11.547
1984	3	10.320	10.533	11.810
1984	4	8.803	8.967	10.017
1985	1	8.183	8.430	9.390
1985	2	7.460	7.657	8.467
1985	3	7.107	7.263	7.993
1985	4	7.167	7.257	7.853
1986	1	6.897	6.947	7.457
1986	2	6.140	6.180	6.607
1986	3	5.523	5.587	5.990
1986	4	5.353	5.407	5.797
1987	1	5.537	5.543	5.923
1987	2	5.657	5.980	6.767
1987	3	6.043	6.163	7.127
1987	4	5.863	6.413	7.240
1988	1	5.723	6.030	6.780
1988	2	6.210	6.493	7.300
1988	3	7.010	7.270	8.003
1988	4	7.727	7.660	8.527
1989	1	8.540	8.587	9.290
1989	2	8.410	8.330	8.927
1989	3	7.843	7.697	8.097
1989	4	7.653	7.510	7.827
1990	1	7.760	7.700	8.127
1990	2	7.747	7.743	8.273
1990	3	7.477	7.407	7.827
1990	4	6.990	6.963	7.303
1991	1	6.023	6.043	6.437
1991	2	5.750	5.950	6.320

Beta Statistics For Utility Companies

Rank	Utility Company	Beta
1	EMPIRE DISTRICT ELEC CO	0.45
2	GREEN MOUNTAIN POWER CORP	0.55
3	SOUTHERN INDIANA GAS ELEC	0.55
4	CENTRAL VERMONT PUB SERV	0.60
5	IOWA-ILLINOIS GAS & ELEC	0.60
6	KENTUCKY UTILITIES CO	0.60
7	MIDWEST ENERGY CO	0.60
8	ST JOSEPH LIGHT & POWER	0.60
9	TNP ENTERPRISES	0.60
10	WPL HOLDINGS INC	0.60
11	ATLANTIC ENERGY INC	0.65
12	CILCORP	0.65
13	DELMARVA POWER & LIGHT CO	0.65
14	HAWAIIAN ELEC INDUSTRIES	0.65
15	LOUISVILLE GAS & ELEC CO	0.65
16	NEVADA POWER CO	0.65
17	OKLAHOMA GAS & ELEC CO	0.65
18	POTOMAC ELECTRIC POWER CO	0.65
19	SIERRA PACIFIC POWER CO	0.65
20	TUCSON ELECTRIC POWER CO	0.65
21	WASHINGTON WATER POWER CO	0.65
22	WISCONSIN ENERGY CORP	0.65
23	WISCONSIN PUBLIC SER CO	0.69
24	ALLEGHENY POWER SYSTEM	0.70
25	BALTIMORE GAS & ELEC CO	0.70
26	CENTRAL & SOUTH WEST	0.70
27	COMMONWEALTH ENERGY SYS	0.70
28	DOMINION RESOURCES	0.70
29	DPL INC	0.70
30	FLORIDA PROGRESS	0.70
31	IDAHO POWER CO	0.70
32	IE INDUSTRIES INC	0.70
33	INTERSTATE POWER CO	0.70
34	IOWA RESOURCES	0.70
35	IPALCO ENTERPRISES	0.70
36	KANSAS POWER & LIGHT CO	0.70
37	NEW ENGLAND ELEC SYSTEM	0.70
38	ORANGE & ROCKLAND UTIL	0.70
39	PACIFICORP	0.70
40	PENNSYLVANIA POWER & LT	0.70
41	PUBLIC SERVICE COLORADO	0.70
42	SCANA	0.70
43	AMERICAN ELECTRIC POWER	0.75
44	CENT ILLINOIS PUBUC SERV	0.75
45	CINCINNATI GAS & ELEC CO	0.75
46	COMMONWEALTH EDISON CO	0.75
47	CONSOLIDATED EDISON CO	0.75
48	DUKE POWER CO	0.75
49	EASTERN UTILITIES ASSOC	0.75
50	FPL GROUP	0.75
51	MDU RESOURCES GROUP	0.75
52	MINNESOTA POWER & LIGHT	0.75
53	NORTHEAST UTILITIES	0.75
54	NORTHERN STATES POWER MN	0.75
55	OHIO EDISON CO	0.75
56	PUGET SOUND POWER & LT	0.75
57	SCECORP	0.75
58	SOUTHERN CO	0.75
59	SOUTHWESTERN PUB SERV CO	0.75
60	TEXAS UTILITIES ELEC CO	0.75
61	HOUSTON INDUSTRIES	0.60
62	PUB SERV ENTERPRISE GROUP	0.60
63	UNION ELECTRIC CO	0.60
	AVERAGE	0.69

Residential Sales Percentages For Utility Companies

Rank	Utility Company	Residential Percentage
1	FLORIDA POWER & LIGHT CO	51.05%
2	COMMONWEALTH ELECTRIC CO	49.79%
3	FLORIDA POWER CORP	48.86%
4	PUGET SOUND POWER & LT	48.80%
5	WASHINGTON WATER POWER CO	46.37%
6	UTILICORP UNITED INC	44.11%
7	LONG ISLAND LIGHTING CO	43.68%
8	GULF POWER CO	43.48%
9	NEVADA POWER CO	43.33%
10	ATLANTIC CITY ELECTRIC CO	42.87%
11	SAVANNAH ELEC & POWER CO	42.50%
12	NORTHWESTERN PUBLIC SERV	41.90%
13	EASTERN EDISON CO	41.54%
14	PORTLAND GENERAL ELEC CO	41.33%
15	EMPIRE DISTRICT ELEC CO	40.70%
16	TAMPA ELECTRIC CO	40.43%
17	NEW YORK STATE ELEC & GAS	40.06%
18	CONNECTICUT LIGHT & POWER	39.91%
19	JERSEY CENT POWER & LIGHT	39.87%
20	CENTRAL LOUISIANA ELEC CO	39.85%
21	MONTANA-DAKOTA UTILITIES	39.67%
22	NARRAGANSETT ELECTRIC CO	39.62%
23	MISSISSIPPI POWER & LIGHT	39.19%
24	SAN DIEGO GAS & ELEC CO	38.33%
25	PUBLIC SER NEW HAMPSHIRE	38.25%
26	ST JOSEPH LIGHT & POWER	38.20%
27	CENTRAL VERMONT PUB SERV	38.19%
28	COLUMBUS SOUTHERN POWER	38.16%
29	ARIZONA PUBLIC SERVICE CO	38.14%
30	BALTIMORE GAS & ELEC CO	38.12%
31	VIRGINIA ELEC & POWER CO	37.96%
32	APPALACHIAN POWER CO	37.44%
33	WESTERN MASS ELEC CO	37.43%
34	PENNSYLVANIA POWER & LT	37.05%
35	CENTRAL POWER & LIGHT CO	36.79%
36	MASSACHUSETTS ELEC CO	36.43%
37	IOWA POWER INC	36.36%
38	IOWA SOUTHERN UTILITIES	36.25%
39	TEXAS UTILITIES ELEC CO	35.85%
40	DAYTON POWER & LIGHT CO	35.74%
41	IOWA ELEC LIGHT & POWER	35.66%
42	WISCONSIN POWER & LIGHT	35.64%
43	ORANGE & ROCKLAND UTIL	35.55%
44	UNITED ILLUMINATING CO	35.49%
45	CINCINNATI GAS & ELEC CO	35.34%
46	METROPOLITAN EDISON CO	35.24%
47	NEW ORLEANS PUBLIC SERV	35.22%
48	CENTRAL MAINE POWER CO	35.06%
49	ARKANSAS POWER & LIGHT CO	34.98%
50	WEST PENN POWER CO	34.79%
51	KENTUCKY UTILITIES CO	34.62%
52	OTTER TAIL POWER CO	34.52%
53	TUCSON ELECTRIC POWER CO	34.39%
54	SOUTH CAROLINA ELEC & GAS	34.33%
55	POTOMAC EDISON CO	34.22%

Table 1 (Continued)
SUMMARY OF
QUALITY RANKINGS
December 31, 1990

Rank	Common Equity		Preferred Per Share		5-Year Growth Rate: 1986-1990		Book Val Per Share	
	1990	1989	1990	1989	1990	1989	1990	1989
1	TRAILER BRT	54.5	CON ED	6.7	GEN P&B UTIL	37.1	PSI RESOURCES	31.6
2	KENTUDY UT	53.2	KANSAS G&E	7.8	GEN P&B UTIL	26.4	CINC G&E	7.4
3	MISC ENERGY	53.2	MISC ENERGY	7.3	DETROIT ED	9.1	MISC ENERGY	6.8
4	MONTANA P&R	52.2	POT EL P&R	7.1	PEAN P&R	8.7	POT EL P&R	6.1
5	CON EDISON	52.2	TECO ENERGY	6.5	PS COLORADO	8.2	IPALDO B&T	6.0
6	MISC PS	50.8	ON SO K&T	6.4	PS COLORADO	7.1	HAWAII ELEC	5.5
7	SO VENT PS	50.8	MONTANA P&R	5.2	KENTUDY UT	7.1	DUE POWER	5.4
8	HAWAII ELEC	49.8	NO STS P&R	5.7	TECO ENERGY	6.6	PSI RESOURCES	5.3
9	NO STS P&R	49.3	HAWAII ELEC	5.0	IPALDO B&T	6.5	DUE POWER	5.2
10	OKLA G&E	48.9	DUE P&R	4.8	DUE POWER	5.5	FLA P&R	5.0
11	APL HOLDINGS	48.7	APL HOLDINGS	4.7	BATTERY	5.1	TECO ENERGY	4.9
12	DUE POWER	48.5	OKLA G&E	4.4	CINC G&E	4.9	CON SO K&T	4.6
13	CIPSCO INC	48.4	MIDWEST RES	4.4	IPALDO P&R	3.9	DOCKIN RESU	4.4
14	DEL INC	47.3	BALT G&E	4.3	SCANA CORP	3.5	NO STS P&R	4.4
15	SAV D&O G&E	46.4	MONTANA P&R	4.1	KANSAS G&E	3.4	SCANA CORP	4.2
16	KAN CITY P&L	46.3	SECORP	4.1	MISC ENERGY	3.2	DOE INC	4.2
17	UNION ELEC	46.1	IPALDO B&T	4.0	TECO ENERGY	2.2	OG&E & ROCK U	4.0
18	IDAHO P&R	45.9	KANSAS P&L	3.9	SECORP	2.2	KENTUDY UT	4.0
19	KAN P&L	45.5	DOCKIN RES	3.8	GEN EDISON	2.1	USE ENERGY	3.8
20	KANSAS P&L	45.1	S D&O G&E	3.8	PACIFICORP	1.6	CON EDISON	3.8
21	PSI RESOURCES	45.0	FLA P&R	3.7	TECO ENERGY	1.5	BATTERY	3.7
22	TECO ENERGY	45.0	PSI RESOURCES	3.7	PUEBT SO P&L	1.5	SECORP	3.5
23	SCANA CORP	44.9	PACIFICORP	3.7	CAROLINA P&L	1.5	APL HOLDINGS	3.5
24	ALLES P&R	44.6	KENTUDY U	3.7	CON SO K&T	1.5	ALLES P&R	3.5
25	PS NEW MEX	44.1	IPALDO B&T	3.4	OG&E & ROCK U	1.3	TEXAS UTIL	3.3
26	CON SO K&T	44.1	TEXAS UTIL	3.3	APL HOLDINGS	1.1	KANSAS P&L	3.3
27	POT EL P&R	43.9	ALLES P&R	3.2	ATLC ENERGY	1.0	CAROLINA P&L	3.1
28	USE ENERGY	43.9	DEL INC	3.2	AMER EL P&R	1.0	OKLA G&E	3.1
29	GEN P&B UTIL	43.5	SCANA CORP	3.1	CIPSCO INC	0.9	ATLC ENERGY	3.1
30	TEXAS UTIL	43.2	PSN P&L	3.1	CILCOORP INC	0.9	TECO ENERGY	3.0
31	IPALDO B&T	43.2	MISC PS	3.0	SO VENT PS	0.9	NEW B&G ELEC	3.0
32	PACIFIC G&E	42.3	ATLC ENERGY	2.9	PACIFIC G&E	0.8	PEAN P&L	2.8
33	CILCOORP INC	42.7	DEL MAR P&L	2.7	WASH WTR P&R	0.5	CILCOORP INC	2.6
34	SECORP	42.5	KAN CIT PL	2.5	DOE INC	0.5	PS B&T GROUP	2.5
35	ATLC ENERGY	42.5	CAR P&L	2.5	TEXAS UTIL	0.5	MONTANA P&R	2.5
36	PS B&T GROUP	42.5	USE ENERGY	2.4	ALLES P&R	0.3	MISC PS	2.5
37	OG&E & ROCK U	42.2	NEVADA P&R	2.4	SIBERA P&C R	0.0	SAV D&O G&E	2.4
38	PS COLORADO	42.0	CIPSCO INC	2.3	FLA P&R	-0.1	NEVADA P&R	2.3
39	CINC G&E	41.3	IPALDO B&T	2.3	IPALDO B&T	-0.3	AMER EL P&R	2.1
40	WASH WTR P&R	41.7	NOU INDS	2.3	PS B&T GROUP	-0.5	SO VENT PS	2.1
41	FLA GROUP	41.5	ON HE P&R	2.2	UNION ELEC	-0.5	HOLSTON INDS	1.9
42	PUEBT SO P&L	41.5	NO EAST UT	2.2	NO STS P&R	-0.7	CON SO K&T	1.7
43	NEW B&G ELEC	41.5	CINC G&E	2.1	HAWAII ELEC	-0.8	KENTUDY UT	1.7
44	CAROLINA P&L	40.5	SPR P&C RES	2.1	SAV D&O G&E	-1.0	MONTANA P&R	1.7
45	AMER EL P&R	40.3	CILCOORP INC	2.1	POT EL P&R	-1.1	PACIFICORP	1.7
46	CON HE P&R	40.3	OR ROCK UT	2.1	MISC PS	-1.5	SOUTHERN CO	1.5
47	PORTLAND GEN	40.1	SO VENT PS	1.8	KANSAS P&L	-1.8	CIPSCO INC	1.5
48	CON ED	40.1	IDAHO P&R	1.7	MONTANA P&L	-1.8	UNION ELEC	1.5
49	NY ST G&E	39.8	NEW B&G EL	1.6	FLA P&R	-2.3	IPALDO B&T	1.4
50	NIPSCO INDS	39.8	AM EL P&R	1.2	PORTLAND GEN	-3.2	ELF STS UT	1.2
51	DOCKIN RESU	39.7	DETROIT ED	1.2	CON HE P&R	-3.4	DETROIT ED	1.0
52	NEVADA P&R	39.6	SOUTHERN CO	1.0	DEL MAR P&L	-3.4	PS COLORADO	0.9
53	SOUTHERN CO	39.6	CON ED	0	SOUTHERN CO	-3.4	MIDWEST RES	0.8
54	KANSAS G&E	39.6	WASH WTR P&R	0	DEL MAR P&L	-3.4	SIBERA P&C R	0.6
55	OHIO EDISON	39.0	UNION TIL	0	MONTANA P&R	-3.9	OHIO EDISON	0.5
56	CON SO K&T	38.9	PS COLO	0	KAN CITY P&L	-4.7	KAN CIT P&L	0.4
57	FLA P&R	38.9	PLG SO P&L	0	BALT G&E	-5.1	NO EAST UT	0.2
58	HOLSTON INDS	38.9	BOSTON ED	-1.7	NO EAST UT	-5.9	IDAHO P&R	0.1
59	DEL MAR P&L	38.5	PSI RESOURCES	-2.5	NY ST G&E	-5.9	PACIFIC G&E	0.0
60	PACIFICORP	38.5	NY ST G&E	-4.1	OHIO EDISON	-5.8	CON ED	0.0
61	SIBERA P&C R	38.3	ROCKES G&E	-5.3	UNION TIL	-7.3	KANSAS G&E	-0.3
62	BALT G&E	37.8	DOE INC	-5.3	BOSTON ED	-7.3	FLA GROUP	-0.3
63	PSN P&L	37.6	PORTLAND GEN	-8.8	HOLSTON INDS	-8.7	WASH WTR P&R	-1.0
64	ROCK G&E	36.7	CON EDISON	-9.1	CON EDISON	-10.9	CON EDISON	-1.0
65	DOE INC	36.2	IPALDO B&T	-9.5	PSN P&L	-12.3	OS ENERGY	-1.1
66	BATTERY	35.1	CON EDISON	-9.5	CON EDISON	-13.3	PHILA ELEC	-1.4
67	MIDWEST RES	36.0	PHILA ELEC	-11.4	CON EDISON	-16.4	PORTLAND GEN	-2.5
68	ELF STS UT	34.4	CON EDISON	-10.0	CON EDISON	-20.3	NY ST G&E	-2.5
69	PHILA ELEC	34.4	CON EDISON	-10.0	CON EDISON	-24.7	PORTLAND GEN	-3.8
70	CON EDISON	34.1	CON EDISON	-10.0	CON EDISON	-33.2	IPALDO B&T	-4.8
71	NO EAST UT	32.7	CON EDISON	-10.0	CON EDISON	-33.2	IPALDO B&T	-4.8
72	IPALDO B&T	32.1	CON EDISON	-10.0	CON EDISON	-33.2	IPALDO B&T	-4.8
73	IPALDO B&T	32.1	CON EDISON	-10.0	CON EDISON	-33.2	IPALDO B&T	-4.8
74	IPALDO B&T	32.1	CON EDISON	-10.0	CON EDISON	-33.2	IPALDO B&T	-4.8
75	IPALDO B&T	32.1	CON EDISON	-10.0	CON EDISON	-33.2	IPALDO B&T	-4.8
76	IPALDO B&T	32.1	CON EDISON	-10.0	CON EDISON	-33.2	IPALDO B&T	-4.8
77	IPALDO B&T	32.1	CON EDISON	-10.0	CON EDISON	-33.2	IPALDO B&T	-4.8
78	IPALDO B&T	32.1	CON EDISON	-10.0	CON EDISON	-33.2	IPALDO B&T	-4.8
79	IPALDO B&T	32.1	CON EDISON	-10.0	CON EDISON	-33.2	IPALDO B&T	-4.8
80	IPALDO B&T	32.1	CON EDISON	-10.0	CON EDISON	-33.2	IPALDO B&T	-4.8

